UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/475,190	12/30/1999	KRISTIAN MATS LINDSKOG	040020-167	6051

27045 7590 05/27/2005	EXAMINER
ERICSSON INC.	BURD, KEVIN MICHAEL

ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024	ART UNIT	PAPER NUMBER
	2631	

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/475,190	LINDSKOG ET AL.
	Examiner	Art Unit	
	Kevin M. Burd	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 January 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20 and 22-52</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20 and 22-52</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 20050525

1.   This office action, in response to the remarks filed 1/14/2005, is a non-final office

action.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-20 and 22-52 have been

considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-4, 6-10, 12-19, 37-41, 43, 44 and 46-52 are rejected under 35 U.S.C.

103(a) as being unpatentable over Larson (US 4,569,042) in view of Soliman (US

6,433,739).

Regarding claims 1, 4, 6, 7, 18, 19, 37, 43, 50 and 51, Larson discloses a

network including a first and second node as shown in figure 1. A first node 100

transmits packets to a second node. The packets include a time of transmission or time

stamp (column 3, lines 3-5). The second node 101 transmits a signal to the first node

100 comprising a reply time stamp (the time of transmission of the reply) and the time

stamp of the first transmission (column 9, lines 49-60). The difference between these

two time stamps will represent an estimate of the transmission time between the two

nodes. The first node 100 uses a difference calculator 204 to calculate the asynchrony,

or difference, between the clocks at each node (column 10, lines 54-55) using the time

stamps from each node (column 10, line 43 to column 11, line 17). Larson does not

expressly disclose transmitting an estimation of a time interval. However, transmission

of an estimated time interval is well known in the art of communication. Soliman

discloses a wireless device (second node) transmitting the recorded round trip delay

back to the base station (first node) (column 14, lines 31-34). It would have been

obvious for one of ordinary skill in the art at the time of the invention to utilize the

teachings of Soliman in the communication system of Larson. By transmitting the time

interval instead of the start and end times of a time interval, the length of the data

transmission can be reduced thereby reducing the complexity of the transmission.

Regarding claims 2, 10, 12, 38, 39, 41, 44, 46 and 52, the asynchrony could be

used by the logic and control unit 202 to synchronize clock 200 of node 100 with the

clock of node 101 (column 11, lines 21-24).

Regarding claim 3, as stated above, Soliman discloses transmitting the round trip

delay.

Regarding claims 8 and 9, over time each sender will transmit a plurality of time

stamps and each receiver will receive a plurality of time stamps.

Regarding claims 13-15, more than one sender and one receiver will be present

in the system. These additional elements are also in communication with the element of

the system.

Regarding claims 16, 17, 48 and 49, any packet transmission system is capable of utilizing this system.

Regarding claims 40 and 47, if the packet is not received within a predetermined time period, a timeout occurs (column 9, line 67 to column 10, line 1).

4.   Claims 5, 11, 20, 22-36, 42 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson (US 4,569,042) in view of Soliman (US 6,433,739) further in view of Greer et al (US 5,697,082).

Regarding claims 5, 11, 42 and 45, the combination of Larson and Soliman discloses the method stated above in paragraph 3. The combination does not disclose using a Kalaman observer for calculating the asynchrony, or difference between the clocks of node 100 and node 101. Greer discloses the use of a Kalaman filter to calibrate an oscillator. The Kalaman filter allows the proper correction of the oscillator to be conducted to correct for errors due to aging of the terminal oscillator (column 2, lines 46-63). Therefore it would have been obvious for one of ordinary skill in the art at the time of the invention to use the Kalaman filter of Greer in the system and method of the combination of Larson and Soliman to allow the difference in the clocks to be compensated for properly so the oscillators are synchronized. This allows data to be transferred correctly.

Regarding claims 20, 22, 23, 29, 30, 32, 35 and 36, Larson discloses a network including a first and second node as shown in figure 1. A first node 100 transmits packets to a second node. The packets include a time of transmission or time stamp

(column 3, lines 3-5). The second node 101 transmits a signal to the first node 100

comprising a reply time stamp (the time of transmission of the reply) and the time stamp

of the first transmission (column 9, lines 49-60). The difference between these two time

stamps will represent an estimate of the transmission time between the two nodes. The

first node 100 uses a difference calculator 204 to calculate the asynchrony, or

difference, between the clocks at each node (column 10, lines 54-55) using the time

stamps from each node (column 10, line 43 to column 11, line 17). Larson does not

expressly disclose transmitting an estimation of a time interval. However, transmission

of an estimated time interval is well known in the art of communication. Soliman

discloses a wireless device (second node) transmitting the recorded round trip delay

back to the base station (first node) (column 14, lines 31-34). It would have been

obvious for one of ordinary skill in the art at the time of the invention to utilize the

teachings of Soliman in the communication system of Larson. By transmitting the time

interval instead of the start and end times of a time interval, the length of the data

transmission can be reduced thereby reducing the complexity of the transmission.

The combination of Larson and Soliman does not disclose using a Kalaman

observer for calculating the asynchrony, or difference between the clocks of node 100

and node 101. Greer discloses the use of a Kalaman filter to calibrate an oscillator. The

Kalaman filter allows the proper correction of the oscillator to be conducted to correct for

errors due to aging of the terminal oscillator (column 2, lines 46-63). Therefore it would

have been obvious for one of ordinary skill in the art at the time of the invention to use

the Kalaman filter of Greer in the system and method of the combination of Larson and

Soliman to allow the difference in the clocks to be compensated for properly so the oscillators are synchronized. This allows data to be transferred correctly.

Regarding claims 24, 27, 28, 33 and 34, any packet transmission system is capable of utilizing this system.

Regarding claims 25, 26 and 31, more than one sender and one receiver will be present in the system. These additional elements are also in communication with the element of the system.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Primak et al (US 2001/0039585) discloses transmitting the round trip delay to a first node (paragraph 0028).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Burd
5/25/2005

KEVIN BURD
PRIMARY EXAMINER